

# CLAIMS

Having thus described the invention, at least the following is claimed:

- 1 1. A fire-blocking fabric comprising:  
 2 a nonwoven scrim; and  
 3 a plurality of flame resistant fibers entangled to and with the nonwoven scrim.
- 1 2. The fabric of claim 1, wherein the nonwoven scrim comprises at least one of  
 2 aramid fibers, polybenzimidazole fibers, and melamine fibers.
- 1 3. The fabric of claim 1, wherein the nonwoven scrim comprises para-aramid and  
 2 meta-aramid fibers in a ratio of approximately 65 para-aramid fiber to 35 meta-aramid  
 3 fiber.
- 1 4. The fabric of claim 1, wherein the flame resistant fibers comprise at least one of  
 2 aramid fibers, polybenzimidazole fibers, and melamine fibers.
- 1 5. The fabric of claim 1, wherein the scrim has a weight of approximately one-half to  
 2 approximately four ounces per square yard.
- 1 6. The fabric of claim 1, wherein the fabric has a weight of approximately 4 to  
 2 approximately 9 ounces per square yard.
- 1 7. The fabric of claim 1, whereby the flame resistant fibers are entangled to and with  
 2 the nonwoven scrim by needlepunching.

1 8. The fabric of claim 1, whereby the flame resistant fibers are hydroentangled to  
2 and with the nonwoven scrim.

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1 9. The fabric of claim 1, whereby the flame resistant fibers are chemically bonded to  
2 and with the nonwoven scrim.

1 10. The fabric of claim 1, wherein the scrim comprises approximately 11 percent to  
2 approximately 60 percent of the fabric by weight.

1 11. The fabric of claim 1, wherein the scrim has a thickness of approximately 0.001 to  
2 approximately 0.07 inches.

1 12. The fabric of claim 1, wherein the flame resistant fibers have a thickness of  
2 approximately 0.031 to approximately 0.128 inches.

1 13. The fabric of claim 1, wherein the fabric satisfies FAA seat burn requirements.

1 14. The fabric of claim 1, wherein the fabric has a tensile strength of greater than  
2 approximately 25 pounds in the machine direction and greater than approximately 30  
3 pounds in the cross-machine direction.

1 15. A fire-blocking fabric comprising:

2 a nonwoven scrim comprising approximately 50% melamine fibers,  
3 approximately 25% para-aramid fibers, and approximately 25% meta-aramid fibers; and  
4 a plurality of flame resistant fibers that are entangled to and with the nonwoven  
5 scrim, the fibers including at least one of aramid fibers, polybenzimidazole fibers, and  
6 melamine fibers.

1 16. The fabric of claim 15, wherein the fabric satisfies FAA seat burn requirements.

1 17. The fabric of claim 15, wherein the fabric has a tensile strength of greater than  
2 approximately 25 pounds in the machine direction and greater than approximately 30  
3 pounds in the cross-machine direction.

1 18. The fabric of claim 15, wherein the scrim has a weight of approximately one-half  
2 to approximately four ounces per square yard.

1 19. The fabric of claim 15, wherein the fabric has a weight of approximately 4 to  
2 approximately 9 ounces per square yard.

1 20. The fabric of claim 15, whereby the flame resistant fibers are entangled to and  
2 with the nonwoven scrim by needlepunching.

1 21. The fabric of claim 15, whereby the flame resistant fibers are chemically bonded  
2 to the nonwoven scrim.

1 22. The fabric of claim 15, whereby the flame resistant fibers are hydroentangled with  
2 the nonwoven scrim.

1 23. The fabric of claim 15, wherein the scrim comprises approximately 11 percent to  
2 approximately 60 percent of the fabric by weight.

1 24. The fabric of claim 15, wherein the scrim has a thickness of approximately 0.001  
2 to approximately 0.07 inches.

1 25. The fabric of claim 15, wherein the flame resistant fibers have a thickness of  
2 approximately 0.031 to approximately 0.128 inches.

- 1 26. A fire-blocking fabric comprising:
- 2 a nonwoven scrim comprising approximately 0-95% by weight melamine fibers,
- 3 approximately 0-95% by weight para-aramid fibers, approximately 0-95% by weight
- 4 meta-aramid fibers, and approximately 0-95% by weight polybenzimidazole fibers; and
- 5 a plurality of flame resistant fibers that are entangled to and with the nonwoven
- 6 scrim, the fibers including at least one of aramid fibers, polybenzimidazole fibers, and
- 7 melamine fibers.

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1 27. An aircraft seat, comprising:  
 2 a frame;  
 3 a cushion;  
 4 a fire-blocking fabric comprising  
 5 a nonwoven scrim, and  
 6 a plurality of flame resistant fibers entangled to and with the nonwoven  
 7 scrim; and  
 8 a dress cover.

1 28. The seat of claim 27, wherein the nonwoven scrim comprises aramid fibers,  
 2 polybenzimidazole fibers, and melamine fibers.

1 29. The seat of claim 27, wherein the nonwoven scrim comprises para-aramid and  
 2 meta-aramid fibers in a ratio of approximately 65 para-aramid fibers to approximately 35  
 3 meta-aramid fiber.

1 30. The seat of claim 27, wherein the flame resistant fibers comprise at least one of  
 2 aramid fibers, polybenzimidazole fibers, and melamine fibers.

1 31. The seat of claim 27, where the scrim has a weight of approximately one-half to  
 2 approximately four ounces per square yard.

1 32. The seat of claim 27, wherein the fire-blocking fabric has a weight of  
 2 approximately 4 to approximately 9 ounces per square yard.

1 33. The seat of claim 27, whereby the flame resistant fibers are entangled to and with  
2 the nonwoven scrim by needlepunching.

1 34. The seat of claim 27, whereby the flame resistant fibers are hydroentangled to and  
2 with the nonwoven scrim.

1 35. The seat of claim 27, whereby the flame resistant fibers are chemically bonded to  
2 and with the nonwoven scrim.

1 36. The seat of claim 27, wherein the scrim comprises approximately 11 percent to  
2 approximately 60 percent by weight of the fire-blocking fabric.

1 37. The seat of claim 27, wherein the scrim has a thickness of approximately 0.001 to  
2 approximately 0.07 inches.

1 38. The seat of claim 27, wherein the fibers have a thickness of approximately 0.031  
2 to approximately 0.128 inches.

1 39. The seat of claim 27, wherein the fire-blocking fabric satisfies FAA seat burn  
2 requirements.

40. The seat of claim 27, wherein the fabric has a tensile strength of greater than approximately 25 pounds in the machine direction and greater than approximately 30 pounds in the cross-machine direction.

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1 41. A method for constructing a fire-blocking fabric for use in an aircraft seat  
2 comprising the steps of:

3 laying a web of flame resistant fibers on a nonwoven scrim; and  
4 entangling the fibers to and with the nonwoven scrim.

1 42. The method of claim 41, wherein the scrim comprises at least one of aramid  
2 fibers, polybenzimidazole fibers, and melamine fibers.

1 43. The method of claim 41, wherein the flame resistant fibers comprise at least one  
2 of aramid fibers, polybenzimidazole fibers, and melamine fibers.

1 44. The method of claim 41, wherein the step of entangling the fibers to and with the  
2 nonwoven scrim comprises needlepunching the fibers and nonwoven scrim.

1 45. The method of claim 41, wherein the step of entangling the fibers to and with the  
2 nonwoven scrim comprises hydroentangling the fibers and nonwoven scrim.

1 46. The method of claim 41, wherein the step of entangling the fibers to and with the  
2 nonwoven scrim comprises chemically bonding the flame resistant fibers to the  
3 nonwoven scrim

1 47. The method of claim 41, wherein the step of entangling the fibers to and with the  
2 nonwoven scrim comprises chemically entangling the fibers and nonwoven scrim.



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48. The method of claim 41, wherein a fire-blocking fabric satisfies FAA seat burn requirements.

TKHR 011920-1380